

Work Order ID 52788

October 14, 2009 10:43:00 AM



Page 1

Item ID: D3391-021
Revision ID: H
Item Name: Fwd Tube Assembly

Accept



Setup Start



Stop



Start Date: 14/10/2009 Start Qty: 1.00
Required Date: 02/11/2009 Req'd Qty: 1.00



Cust Item ID:
Customer:

Reference:

Approvals: Process Plan: BA Date: 09-10-14 Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3391	Rev H								

100
 Skidtubes 0.00
Skidtubes Memo 0.00
Skidtubes Cut extrusion to 46.52 +0.010 -0.020

DP 9-10-14

110
 BENDING MACHINE - SKIDTUBES 0.00
CNC Bend 1 Memo 0.00
CNC Delta 100 Bender Bend as per Dwg D3391 Using Bend Prog 3391021

DP 9-10-14

120
 QC5- Inspect part completeness to step on W/O 0.00
QC Memo 0.00
Quality Control

h2 6.875"
L° = 13°

2) 8.09/10/15

(X2)

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Page 2

Item ID: D3391-021

Revision ID: H

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Start Date: 14/10/2009 Start Qty: 1.00




Required Date: 02/11/2009 Req'd Qty: 1.00

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start
Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130  HAAS 1 HAAS CNC vertical machine #1	HAAS CNC VERTICAL MACHINING #1 Memo 1-Machine as per Folio FA590 Rev. <u>F</u> & Dwg D3391 Rev. <u>H</u> Identify as D3391-1 2-Deburr	0.00 0.00				<u>1</u>	<u>0</u>		
140  QC Quality Control	QC2- Inspect parts off machine FAI/FAIB Memo	0.00 0.00				<u>1</u>	<u>0</u>		
150  Mill Conv Conventional Milling Machine	CONVENTIONAL MILLING MACHINE Memo Drill X1 Aft cap as per Dwg D3391 .1875" dia	0.00 0.00				<u>1</u>	<u>0</u>		

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Item ID: D3391-021

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Setup Start



Revision ID: H

Stop



Item Name: Fwd Tube Assembly

Start Date: 14/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 02/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

QC2- Inspect parts off machine FAI/FAIB

0.00

ark 09/10/21



QC

Memo

0.00

6 8

Quality Control

170

QC8- Inspect parts - second check

0.00

mmw
09/10/21

QC

Memo

0.00

1 2

Quality Control

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Item ID: D3391-021

Accept



Setup Start



Revision ID: H

Stop



Item Name: Fwd Tube Assembly

Start Date: 14/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 02/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

180

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Drill float bag holes as per Dwg D3391 using DT8798(Do not open tow cap holes to finish size)
(ONLY DRILL HOLES MARKED "A")

2-Drill Remaining two holes for tow cap using DT 8819 Locating off of .1875" holes drilled in previous step

3-Open tow cap holes to .208" as per Dwg D3391

4-Open Tow Ring hole to .640" as per Dwg D3391

5- open float bag holes 0.328" and counter sink as per dwg D3391

6-Deburr & Scribe Batch number Inside aft end.

7-Transfer drill D3391-021 with D3391-023

MB
09-10-22

190

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

2) 8/10/27

1 4 9/10/27

②

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Item ID: D3391-021
 Revision ID: H
 Item Name: Fwd Tube Assembly
 Start Date: 14/10/2009 Start Qty: 1.00
 Required Date: 02/11/2009 Req'd Qty: 1.00
 Reference:

Accept



Setup Start
 Stop



Cust Item ID:
 Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start
 Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200 	Chemical Conversion Coat per QSI005 4.1	0.00				1			
HandFinish	Memo	0.00							
Hand Finishing									
210 	QC3- Inspect Part Finish	0.00				1			
QC	Memo	0.00							
Quality Control									
220 	Skidtubes	0.00				1			
Skidtubes	Memo	0.00							
Skidtubes	1-instal spacers as per dwg D3391 A/R Magnabond 6398 batch: M12417 exp. date: 11/1/30 cure time 12hrs. as per QSI015 2- grind crossbolt flush 3-back drill crossbolt if necessary								

MB
 09-10 28

u 9/10/29

[illegible]

October 14, 2009 10:43:00 AM



RESEARCH DESIGN

[illegible]

1 111111 111111 111111

Cust Item ID:

Customer:

Abstract

**Insp.
Stamp**

2) 5 or 10/29

0.00

Quality Control

$\Rightarrow \text{all } 0 \leq i \leq 29$



Powdercoat

Powder Coating

Memo

START TIME: 10:30am
OVEN TEMPERATURE: 320°C
FINISH TIME: 11:00pm

0.00

0.00



QC

Quality Control

Memo

0.00

MO 09/10/29

X

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Item ID:	D3391-021	Accept		Setup	Start	
Revision ID:	H				Stop	
Item Name:	Fwd Tube Assembly					
Start Date:	14/10/2009	Start Qty:	1.00		Cust Item ID:	
Required Date:	02/11/2009	Req'd Qty:	1.00		Customer:	
Reference:						

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:		Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
259	Skidtubes	0.00							
Skidtubes	Memo	0.00	MD	09/10/30		X2			
Skidtubes	**** install D3591-1 spacer as per DSI9364 ****								
	QCS => 509/10/03								
260	Identify as per dwg & Stock Location:	0.00							
Packaging	Memo	0.00	MD	09/11/03		X1			
Packaging	52788								
280	QC21- Final Inspection - Work Order Release	0.00							
QC	Memo	0.00							
Quality Control									

09/11/03

MF

09-11-03

Picklist Print

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Page 1

Work Order ID: 52788

Parent Item: D3391-021RevH

Parent Item Name: Fwd Tube Assembly


Comments:

Start Date: 14/10/2009

Required Date: 02/11/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D6013-047RevA		Manufactured	No			100	Each	63.0000	1.0000			
												
Skidtube Material												

Handwritten: 09-10-14

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
LG	63	
23935	6	
26547	57	

D3670-4-200RevA

Manufactured

No

260

Each

163.0000

4.0000



SPACER

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	163	
46106	4	
47122	32	
48198	42	
48269	85	

Handwritten: 4X MB 09-10-28

Picklist Print

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Work Order ID: 52788



Parent Item: D3391-021RevH



Parent Item Name: Fwd Tube Assembly

Start Date: 14/10/2009

Required Date: 02/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3401-041RevB		Manufactured	No			260	Each	24.0000	1.0000			
Tow Cap Assembly												

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST 24

36216 1

41931 7

46029 16

21 mo 09/10/29

D3564-13RevD Manufactured No



260 Each 64.0000 1.0000



Wearshoe

Warehouse Loc Qty Loc Code
Location

Main Warehouse

FP17 52

51611 33

52059 19

Main Warehouse

ST 12

45409 2

46495 10

21 mo 09/10/29

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Shop Packet Print

Page 2

Picklist Print

Page 3

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Work Order ID: 52788



Parent Item: D3391-021RevH



Parent Item Name: Fwd Tube Assembly

Start Date: 14/10/2009

Required Date: 02/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3566-13RevC		Manufactured	No			260	Each	41.0000	1.0000			
Gasket												

Warehouse Loc Qty Loc Code

Location

Main Warehouse

FP

39

51606

39

Main Warehouse

ST

2

45717

1

50265

1

X1 MD 09/10/29

AN960C10L

Purchased

No

260

Each

4,772.000

10.0000



washer

Warehouse Loc Qty Loc Code

Location

OFFSHORE

FG

100

103585

100

Main Warehouse

ST

4672

112116

1009

112612

3663

X10 MD 09/10/29

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Shop Packet Print

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Picklist Print

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Work Order ID: 52788



Parent Item: D3391-021RevH



Parent Item Name: Fwd Tube Assembly

Start Date: 14/10/2009

Required Date: 02/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN3C4A 		Purchased	No			260	Each	2,216.000	10.0000			
BOLT												

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST	2216	
112082	14	
112314	40	
112720	162	
112724	500	
112794	1000	
112829	500	

~~X10~~ MD 09/10/29

D3672-1RevB

Manufactured No



260 Each 2,060.000 4.0000



Phenolic Washer

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST	1560	
39275	19	
42329	19	
47628	522	
52505	1000	

~~X5~~ MD 09/10/29

Main Warehouse

ST117	500	
51674	500	

Picklist Print

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Work Order ID: 52788



Parent Item: D3391-021RevH



Parent Item Name: Fwd Tube Assembly

Start Date: 14/10/2009

Required Date: 02/11/2009

Comments:

Start Qty: 1.00

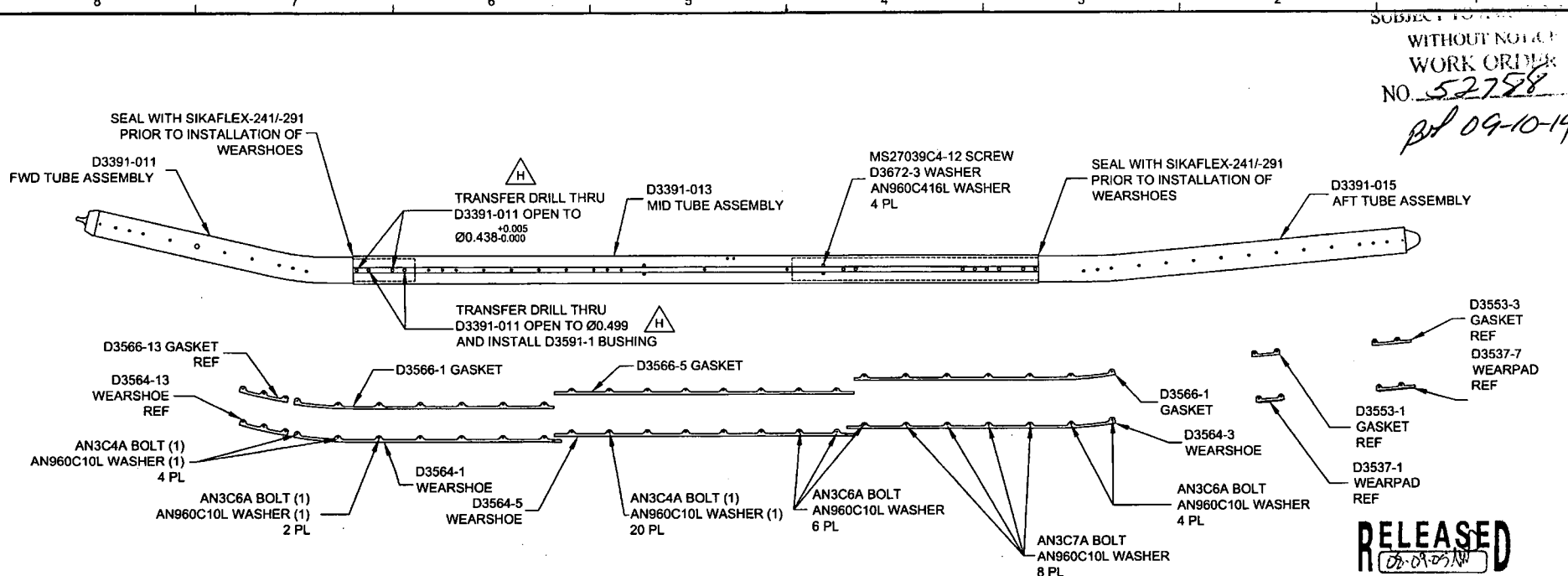
Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AELS-1032-130		Purchased	No			260	Each	0.0000	2.0000			
					(110511)					x 2	md 09/10/29	
INSERT												
AELS-1032-225		Purchased	No			260	Each	0.0000	10.0000			
										x 10	md 09/10/29	
INSERT												
					(110768)							

SEE COPY
UNCONTROLLED COPY

WITHOUT NOTICE
WORK ORDER
NO. 52758

09-10-14



D3391-041 ASSEMBLY

D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

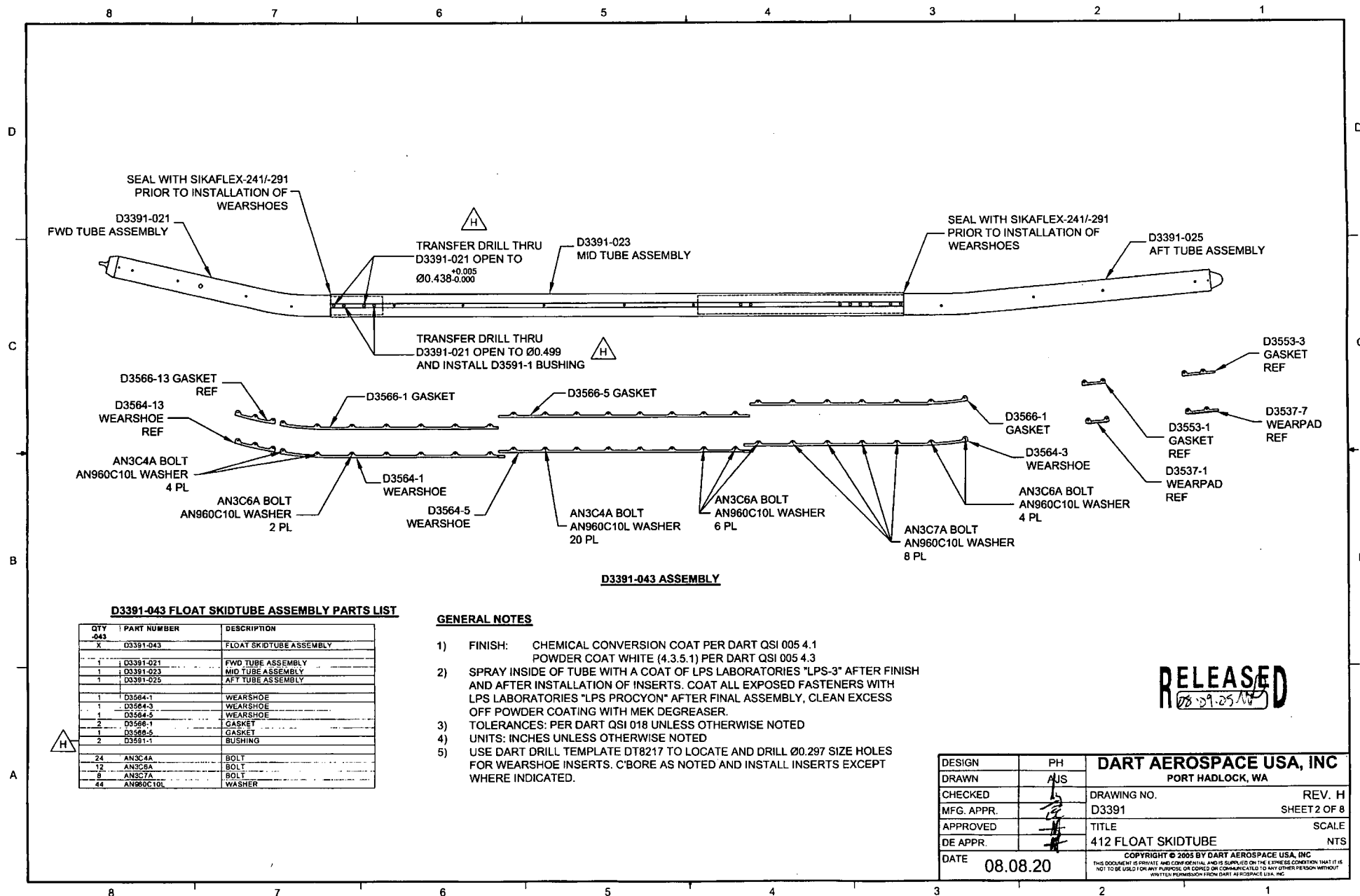
QTY	PART NUMBER	DESCRIPTION
X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
2	D3591-1	BUSHING
4	D3672-3	WASHER
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY. CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

H	DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074)	AJS	08.08.20
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 1 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC	

W/O 52788



D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
2	D3561-1	BUSHING
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER

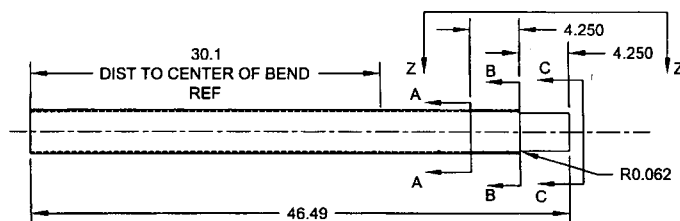
GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

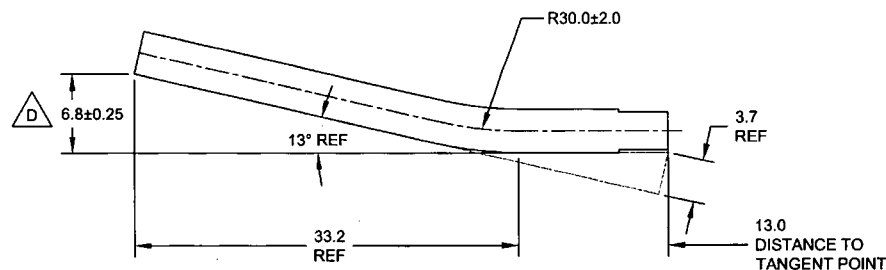
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08-09-25

DESIGN	PH	DART AEROSPACE USA, INC	
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CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 2 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC	
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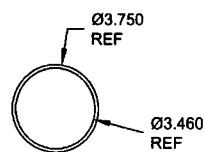
w/o 52788



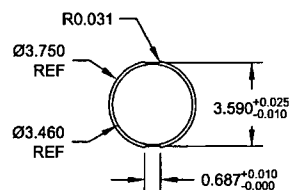
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



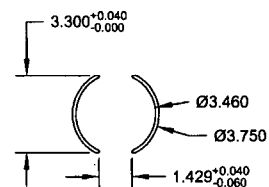
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



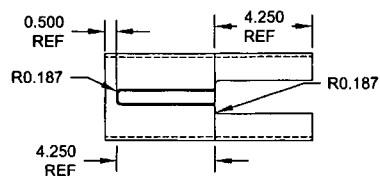
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X

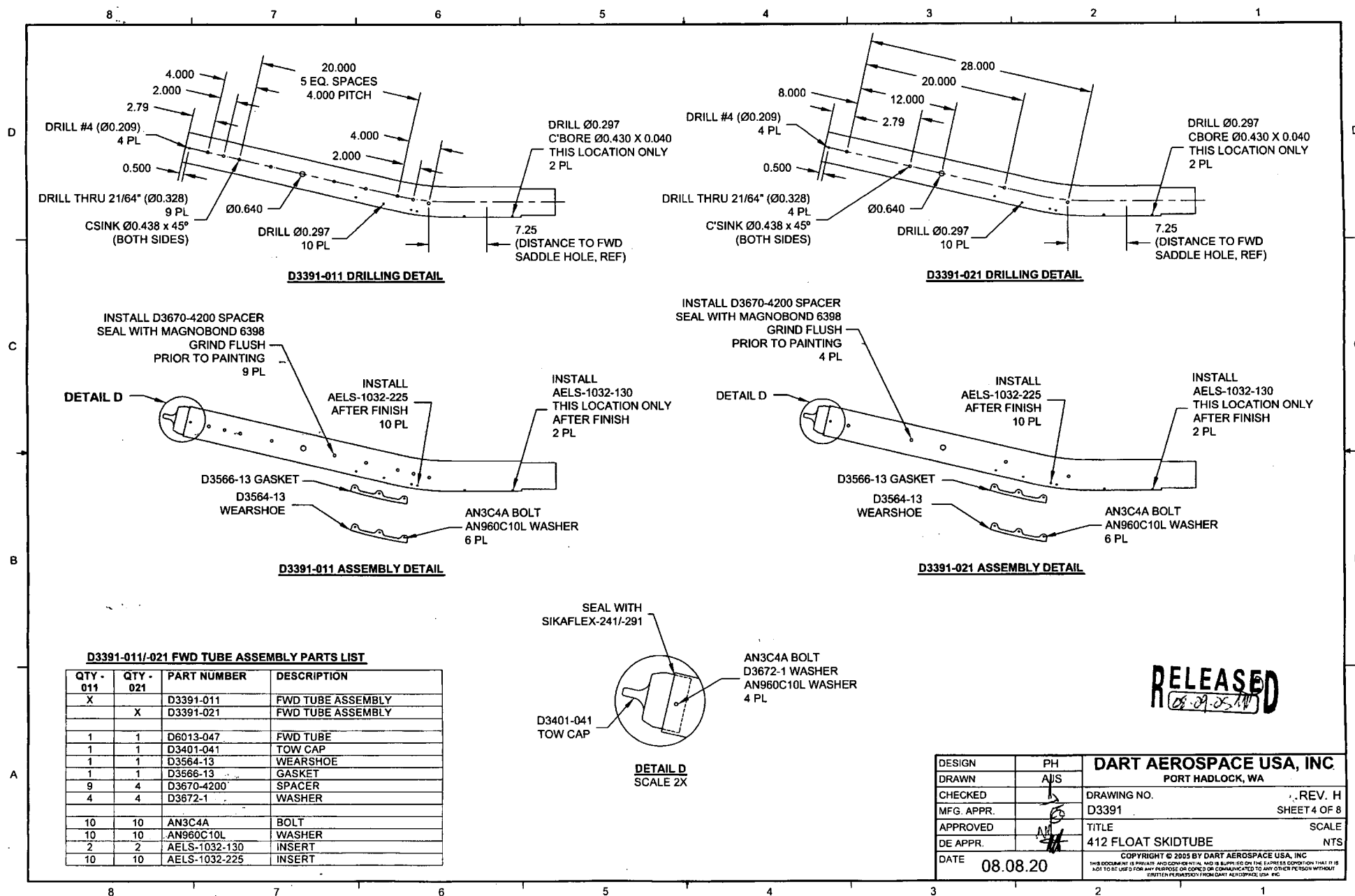


VIEW Z-Z
SCALE 2X

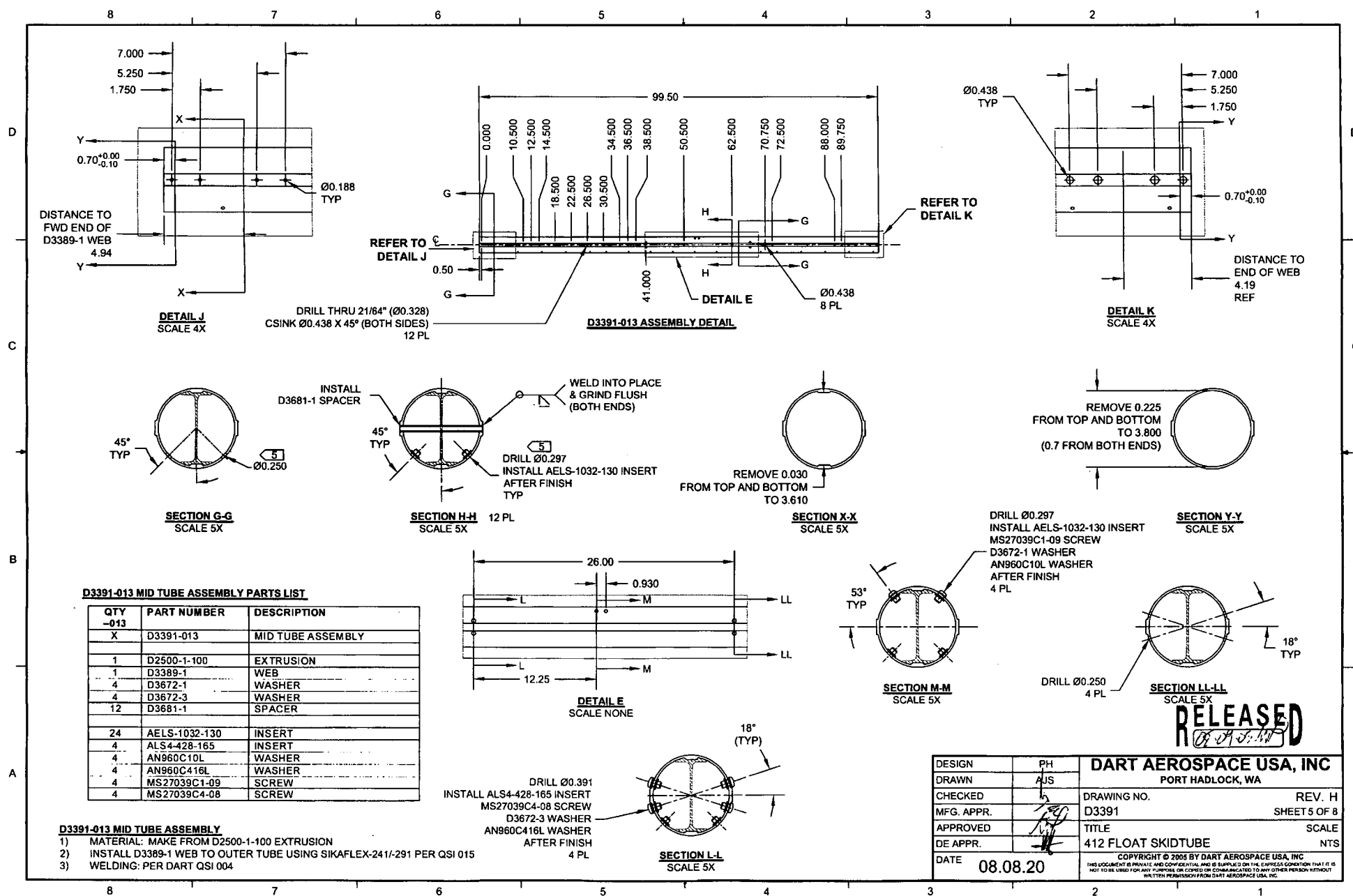
RELEASED
08-05-11

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AUS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 3 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
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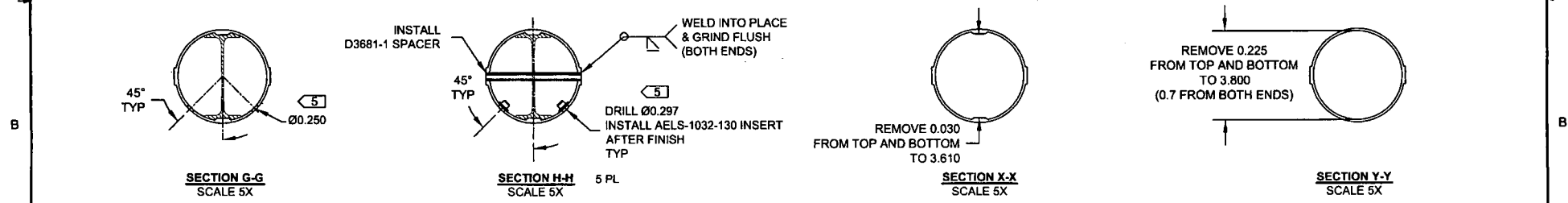
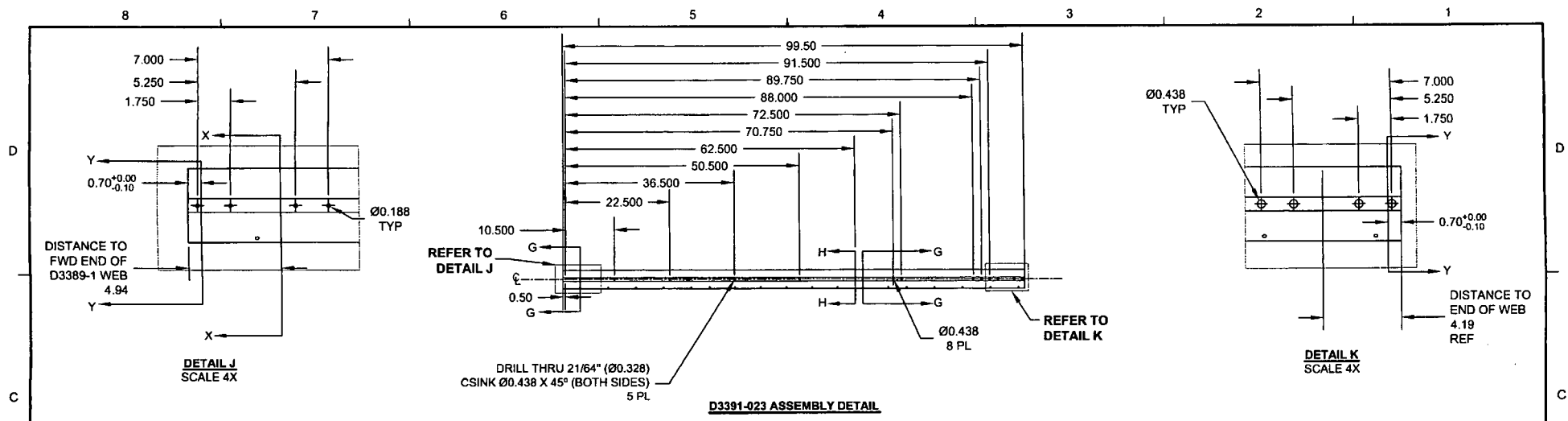
w/0 5278Y



W/052788



w/o 52788

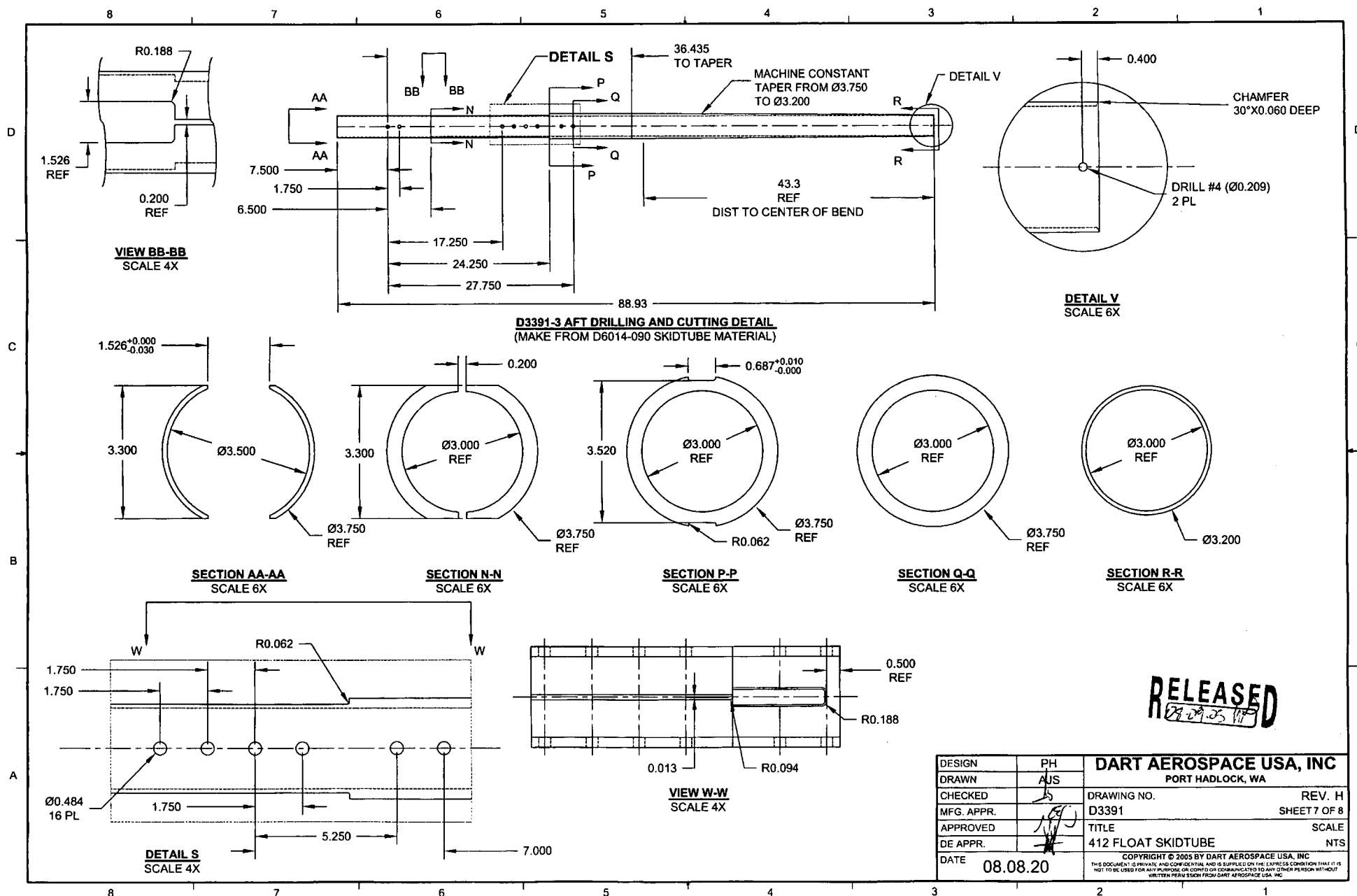


D3391-023 MID TUBE ASSEMBLY PARTS LIST		
QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

- D3391-023 MID TUBE ASSEMBLY**
- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
 - 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
 - 3) WELDING: PER DART QSI 004

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 6 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
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w/o 52788



W/O 52788

